

IN THE CLAIMS

Please cancel Claims 2, 3, 5 and 6 without prejudice or disclaimer of subject matter.

Please amend Claim 1, 4, 7 and 8, and add Claims 9 and 10, to read as follows.

1. (Currently Amended) An ink jet recording head comprising:

an element base plate provided with plural discharge energy-generating elements for generating ~~[[a]]~~ bubbles in liquid by thermal energy, and a through-opening becoming a supply chamber for leading liquid to said discharge energy-generating elements; and

a flow-path-forming base plate (i) for forming (a) plural bubbling chambers containing said discharge energy-generating elements, respectively, ~~on the face a surface of~~ said element base plate having said discharge energy-generating elements formed thereon, and (b) plural supply paths for leading liquid to ~~each of~~ said bubbling chambers, respectively, and (ii) having plural nozzles provided therefor corresponding to said bubbling chambers, respectively, to enable ~~each of~~ said bubbling chambers to be communicated with the outside of the head, wherein

a diameter of each of said nozzles is not greater than a distance between the surface of said element base plate on which said discharge energy-generating elements are formed and a surface of said flow-path-forming base plate opposed to the surface on which said discharge energy-generating elements are formed in said respective supply path,

said ink jet recording head is provided with a flow path structure ~~having the flow path sectional area right angled to the~~ so configured that, for each of said supply paths, a

cross-sectional area thereof perpendicular to a liquid flow direction becoming the narrowest is smallest between said respective bubbling chamber and the through-opening,

and said flow path structure ~~changes with difference in level with respect to the direction perpendicular to the face of said element base plate having said discharge energy-generating elements formed thereon~~ is provided with (i) a first structure for closing a part of each of said supply paths, said first structure being formed on the surface of said element base plate having said discharge energy-generating elements formed thereon, and (ii) a second structure formed on said flow-path-forming base plate to be a columnar structure extending from said first structure, said second structure also being for closing a part of each of said supply paths.

2. (Canceled)

3. (Canceled)

4. (Currently Amended) An ink jet recording head according to Claim 1, wherein ~~the~~ a shape of the a portion of the flow a supply path cross-section right angled perpendicular to the liquid flow path direction having the narrowest flow path smallest cross-sectional area is square.

5. (Canceled)

6. (Canceled)

7. (Currently Amended) An ink jet recording head according to Claim ~~[[3]]~~ 1, wherein said first structure ~~[[is]]~~ comprises one or more square columns, and said second structure ~~[[is]]~~ comprises one or more columns.

8. (Currently Amended) An ink jet recording head according to Claim 1, wherein ~~[[a]]~~ the bubbles generated by said discharge energy-generating elements ~~[[is]]~~ are communicated with the air outside for discharging ~~[[a]]~~ liquid droplets.

9. (New) An ink jet recording head comprising:

an element substrate having a plurality of discharge energy-generating elements for generating bubbles in liquid by thermal energy and a through-opening becoming a supply chamber for leading liquid to said discharge energy-generating elements;

a discharge port plate opposed to said element substrate and having a plurality of discharge ports opposed to said plurality of discharge energy-generating elements, respectively;

a plurality of supply paths provided in a space sandwiched by said element substrate and said discharge port plate, for supplying liquid to said plurality of discharge ports, respectively, from said through-opening;

a plurality of columnar structures provided for said plurality of supply paths, respectively, and extending from a side of said element substrate to a side of said discharge port plate,

wherein, for each of said supply paths, a diameter of said discharge port is not greater than a height of said supply path, and

for each of said supply paths, one end of said respective columnar structure is provided on a structural member formed in said supply path to extend across an entire width of the supply path observed from a cross-section of the supply path perpendicular to a direction in which said supply path extends, so that a length of a gap between adjacent columns of said columnar structure, in a height direction of said supply path, is shorter than a diameter of said discharge port.

10. (New) An ink jet recording head comprising:

an element substrate having a plurality of discharge energy-generating elements for generating bubbles in liquid by thermal energy and a through-opening becoming a supply chamber for leading liquid to said discharge energy-generating elements;

a discharge port plate opposed to said element substrate and having a plurality of discharge ports opposed to said plurality of discharge energy-generating elements, respectively;

a plurality of supply paths provided in a space sandwiched by said element substrate and said discharge port plate, for supplying liquid to said plurality of discharge ports, respectively, from said through-opening;

a plurality of columnar structures provided corresponding to said plurality of supply paths, respectively, each of said columnar structures being disposed between an end portion of a respective supply path at a side of said through-opening and said through-opening, said columnar structures extending from a side of said element substrate to a side of said discharge port plate,

wherein, for each of said supply paths, a diameter of said discharge port is not greater than a height of said supply path, and

for each of said supply paths, one end of said respective columnar structure has a width larger than a width of said supply path, observed from a cross-section of said supply path perpendicular to a direction in which said supply path extends, and is formed on a structural member formed between a side of said supply path and said through-opening, so that a length of a gap between adjacent columns of said columnar structure, in a height direction of said supply path, is shorter than a diameter of said discharge port.